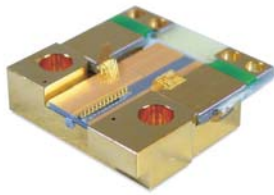




## LU09xxFyyy 9xxnm Laser Diode on F-Mount Up to 16W c.w. and 30W in pulsed mode



### Description:

The LU09xxFyyy series laser diodes contains a highly optimized GaInAs/GaAs quantum well laser structure on GaAs substrate. Long lifetime is achieved through the Lumics proprietary laser diode facet passivation technology. The process includes careful design, precisely defined manufacturing and extensive burn-in testing of each individual emitter. The device qualification includes life time testing and a set of thermal and mechanical tests.

Each laser diode chip is individually serialized for traceability, and is shipped with a specified set of test data. Applications are mainly in solid state laser pumping, illumination, printing or medical treatment.

### Features & Functions:

- Wavelength 915, 940 or 975nm
- Up to 16W c.w. operation
- Up to 30W pulsed peak power
- 94µm or 190µm emitter width
- Burn-in tested single emitter
- 2.2mm mounting holes
- Copper base
- Electrically isolated
- Option: FAC lens

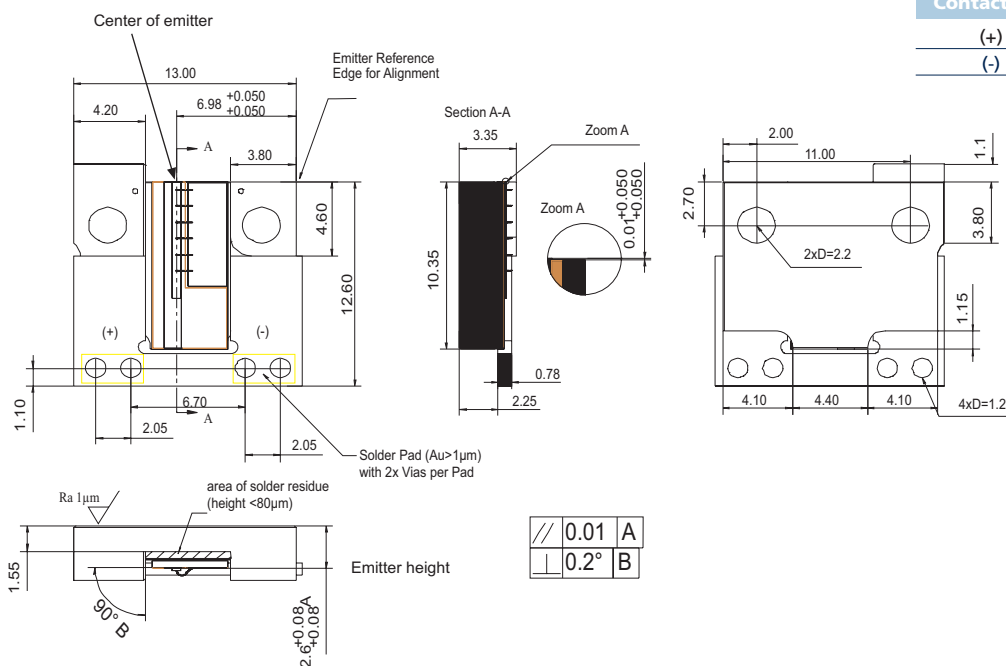
### Benefits:

- Small footprint
- Efficient heat sink
- High reliability
- OEM quantities

### Applications:

- Pumping (SSL)
- Plastic welding
- Marking
- Illumination
- Medical treatment

### Drawing (dimensions in mm)



### Connections

Contact Pad	Function
(+)	LD Anode (+)
(-)	LD Cathode (-)

Your ideas are welcome.

## Typical Electrical and Optical Characteristics

Parameter	Symbol	LU09xxF110	LU09xxF160	Unit
Emitter Width	W	94	190	µm
c.w. Operating Power	P <sub>Op (c.w.)</sub>	11	16	W
c.w. Operating Current	I <sub>Op (c.w.)</sub>	12	17.7	A
Pulsed (1) Operating Power	P <sub>Op (&lt; 30µsec pulse / &lt; 30% d.c.)</sub>	15	30	W
Pulsed (1) Operating Current	I <sub>Op (&lt; 30µsec pulse / &lt; 30% d.c.)</sub>	16.8	32.5	A
Threshold Current	I <sub>th</sub>	<1	<2	A
Forward Voltage	V <sub>Op</sub>	2	2	V
Slope Efficiency	λ <sub>diff</sub>	0.95	0.95	W / A
Peak Wavelength	LU0915Fyyy: λ <sub>peak</sub>	915+/-10	915+/-10	nm
	LU0940Fyyy: λ <sub>peak</sub>	940+/-10	940+/-10	nm
	LU0975Fyyy: λ <sub>peak</sub>	975+/-10	975+/-10	nm
Spectral Width (FWHM)	λ <sub>rms</sub>	4	4	nm
Beam Divergence (horizontal) (2)	slow axis	7	7	deg
Beam Divergence (vertical) (2)	fast axis	27	27	deg
AR Reflectivity (3)	r <sub>f</sub>	2	2	%
HR Reflectivity	r <sub>r</sub>	95	95	%
Spectral Shift with Temp.	λ <sub>T-Shift</sub>	0.3	0.3	nm / K
Spectral Shift with Current	λ <sub>P-Shift</sub>	0.5	0.5	nm / A
Operating Temp.	T <sub>Op</sub>	20-30	20-30	°C
<b>Option: FAC lense</b>				
Fast axis (vertical) divergence	NA	< 3	< 3	mrad
Vertical width of the beam		< 0.8	< 0.8	mm

### Important Notes:

- (1) Typical pulse condition: pulse <10µsec / d.c. 1%
- (2) FWHM at P<sub>Op</sub>
- (3) Other coatings are offered on request

## Absolute Maximum Ratings

Parameter	Symbol	LU09xxF110	LU09xxF160	Unit
LD c.w. Forward Current	I <sub>Op, (c.w.) max</sub>	15	20	A
LD pulsed (<30µsec) Forward Current	I <sub>Op, (pulsed) max</sub>	18	34	A
LD Reverse Voltage	V <sub>R, max</sub>	2	2	V
Maximum Processing Temperatures:				
Solder pads for LD contacts / max 5sec.	T <sub>Op max, solder pad</sub>	250	250	°C
Soldering of Cu base block / max 5sec.	T <sub>Op max, Cu base</sub>	150	150	°C

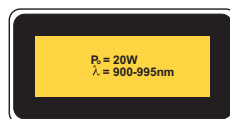
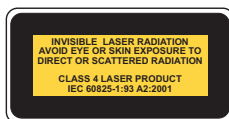
### Notes:

Absolute Maximum Ratings may be applied to the laser module for short periods of time only. Exposure to maximum ratings for extended periods of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.

Operating Temperature and Rel. Humidity must be chosen such that the dewpoint of humid air around the laser diode is below the operating heat sink temperature to avoid condensing of water on the laser diode facet.

This product contains 1.5% BeO as solid fully metallized ceramic (CAS Number 1304-56-9), 0.05% of solid metallized InAlGaAsP crystal, as well as 0.05% Pb (CAS Number 7439-92-1).

## User Safety



Your ideas are welcome.